Air Products and Chemicals, Inc.
Box 538, Allentown, PA 18105
Tel. (215) 481-4911 · TWX 510-651-3686
CABLE-AIRPROD · TELEX 84-7416

Air Products

Industrial Gas Division

Nitrogen Material Safety Data Sheet

DPM 154-1

EMERGENCY PHONE: 800—523-9374 IN PENNSYLVANIA: 800—322-9092	TRADE NAME AND SYNONYMS Nitrogen, LIN (Liquid only)	CHEMICAL NAME AND SYNONYMS Nitrogen
ISSUE DATE AND REVISIONS Issued: 13 April 1977 Rev: 16 February 1981	FORMULA N_2 MW: 28.01	CHEMICAL FAMILY Inert gas

HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE
Nitrogen is a simple asphyxiant and has no threshold limit value (TLV).

SYMPTOMS IF INGESTED, CONTACTED WITH SKIN, OR VAPOR INHALED
Nitrogen is odorless and nontoxic, but may produce suffocation by diluting the concentration of oxygen in air below levels necessary to support life. PERSONNEL, **INCLUDING RESCUE WORKERS,** SHOULD NOT ENTER AREAS WHERE THE OXYGEN CONCENTRATION IS BELOW 19%, UNLESS PROVIDED WITH A SELF-CONTAINED BREATHING APPARATUS OR AIRLINE RESPIRATOR. Exposure to oxygen-deficient atmospheres may produce dizziness, nausea, vomiting, loss of consciousness, and death. Death may result from errors in judgement, confusion, or loss of consciousness which prevents self-rescue. At low oxygen concentrations unconsciousness and death may occur in seconds without warning. Extensive tissue damage or burns can result from exposure to liquid nitrogen or cold nitrogen vapors.

TOXICOLOGICAL PROPERTIES
Nitrogen is a simple asphyxiant and constitutes 79% of the air we breathe. Nitrogen does not support life and may produce immediately hazardous atmospheres through the displacement of oxygen. Nitrogen under high pressure can produce narcosis even though oxygen sufficient for life is present.

RECOMMENDED FIRST AID TREATMENT
Persons suffering from lack of oxygen should be moved to areas with normal atmospheres. SELF-CONTAINED BREATHING APPARATUS MAY BE REQUIRED TO PREVENT ASPHYXIATION OF RESCUE WORKERS. Assisted respiration and supplemental oxygen should be given if the victim is not breathing. If cryogenic liquid or cold boil-off gas contacts a worker's skin or eyes, frozen tissues should be flooded or soaked with tepid water (105-115F; 41-46C). DO NOT USE HOT WATER. Cryogenic burns which result in blistering or deeper tissue freezing should be seen promptly by a physician.

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	AUTO IGNITION TEMP	FLAMMABLE LIMITS	LEL	UEL
N/A	N/A	N/A	N/A	N/A

EXTINGUISHING MEDIA	ELECTRICAL CLASSIFICATION
N/A	GROUP N/A

SPECIAL FIRE FIGHTING PROCEDURES
N/A

UNUSUAL FIRE AND EXPLOSION HAZARDS
N/A

PHYSICAL DATA

BOILING POINT (°F.)	FREEZING POINT (°F.)
@ 1 atm. -320.5F (-195.8C)	@ 1 atm -346.0F (-210.0C)
VAPOR PRESSURE (psia)	SOLUBILITY IN WATER
N/A	@ 68F (20C), 1 atm 1.52% by volume

VAPOR DENSITY (lb/cu ft)	SPECIFIC GRAVITY (AIR = 1)	LIQUID DENSITY (lb/cu ft)	SPECIFIC GRAVITY (H_2O = 1)
@ 68F (20C), 1 atm 0.07273	@ 68F (20C), 1 atm 0.967	@ boiling point, 1 atm 50.45	@ boiling point, 1 atm 0.808

APPEARANCE AND ODOR
Both liquid and gaseous nitrogen are colorless and odorless.

DISCLAIMER

Information contained in this data sheet is offered without charge for use by technically qualified personnel at their discretion and risk. All statements, technical information and recommendations contained herein are based on tests and data which we believe to be reliable, but the accuracy or completeness thereof is not guaranteed and no warranty of any kind is made with respect thereto. This information is not intended as a license to operate under or a recommendation to practice or infringe any patent of this Company or others covering any process, composition of matter or use.
Since the Company shall have no control of the use of the product described herein, the Company assumes no liability for loss or damage incurred from the proper or improper use of such product.

© 1978 Air Products and Chemicals, Inc.

Printed in U.S.A. 310-812